

IN THE CLAIMS

Claims 1-14 (Canceled).

15. (Currently amended) A filter delivery unit for a vascular filter having a plurality of elongate appendages for engaging a vessel wall comprising:

an elongate pusher wire having a free end;

a flexible hinge formed in said pusher wire and spaced from said free end, said pusher wire having an end section formed in said pusher wire extending between said flexible hinge and said free end, said flexible hinge including a cross sectional area of reduced size relative to both said pusher wire and said pusher wire end section, and said flexible hinge being formed to permit said pusher wire end section to pivot about said flexible hinge to move said free end radially in all directions; and

wherein said pusher wire is formed of thermal shape memory material having a temperature transformation level below which the material is in a martensitic state and relatively pliable and above which the material is normally in an austenitic state and is substantially rigid, said material exhibiting stress sensitivity which can cause the material to transform to the martensitic state in response to stress while the temperature of the material remains above the temperature transformation level, said cross sectional area of reduced size forming said hinge being formed to receive a concentration of stress applied to said pusher wire end section.

16. (Previously presented) A filter delivery unit for a vascular filter having a plurality of elongate appendages for engaging a vessel wall comprising:

an elongate pusher wire having a free end

a flexible hinge formed in said pusher wire comprising a cross sectional area of reduced size, spaced from said free end, said pusher wire having an end section extending between said flexible hinge and said free end, said flexible hinge being formed to permit said pusher wire end section to pivot about said flexible hinge to move said free end radially in all directions; and

an enlarged spline spaced from the free end of said pusher wire secured to said pusher wire adjacent to said hinge, said hinge being positioned between said spline and the free end of said pusher wire, said spline having an outer surface provided with a plurality of spaced grooves

extending substantially parallel to the longitudinal axis of said spline to receive the elongate appendages of said filter.

17. (Previously presented) The filter delivery unit of claim 16 which includes a filter engaging pusher pad formed on the free end of said pusher wire.

18. (Previously presented) The filter delivery unit of claim 17 wherein said pusher wire is formed with a cross sectional area of reduced size to provide said hinge.

19. (Previously presented) The filter delivery unit of claim 18 wherein said pusher wire is formed of thermal shape memory material having a temperature transformation level below which the material is in a martensitic state and relatively pliable and above which the material is normally in an austenitic state and is substantially rigid, said material exhibiting stress sensitivity which can cause the material to transform to the martensitic state in response to stress while the temperature of the material remains above the temperature transformation level, said cross sectional area of reduced size forming said hinge being formed to receive a concentration of stress applied to said pusher wire end section.

20. (Previously presented) The filter delivery unit of claim 15 which includes a filter engaging pusher pad formed on the free end of said pusher wire.

21. (Previously presented) The filter delivery unit of claim 15 wherein said pusher wire includes a cross sectional area of enlarged size, and the cross sectional areas of reduced and enlarged sizes are concentric.

22. (Previously presented) A filter delivery unit for a vascular filter having a plurality of elongate appendages for engaging a vessel wall comprising:

an elongate pusher wire having a free end;

a flexible hinge formed in said pusher wire comprising a cross sectional area of reduced size, spaced from said free end, said pusher wire having an end section extending between said flexible hinge and said free end, said flexible hinge being formed to permit said pusher wire end section to pivot about said flexible hinge to move said free end radially in all directions;

an enlarged spline spaced from the free end of said pusher wire secured to said pusher wire adjacent to said hinge, said hinge being positioned between said spline and the free end of said pusher wire, said spline having an outer surface provided with a plurality of spaced grooves extending substantially parallel to the longitudinal axis of said spline to receive the elongate appendages of said filter; and

wherein said pusher wire is formed of thermal shape memory material having a temperature transformation level below which the material is in a martensitic state and relatively pliable and above which the material is normally in an austenitic state and is substantially rigid, said material exhibiting stress sensitivity which can cause the material to transform to the martensitic state in response to stress while the temperature of the material remains above the temperature transformation level, said cross sectional area of reduced size forming said hinge being formed to receive a concentration of stress applied to said pusher wire end section.